GSFC 427-04-01
Revision -
Code 427

LANDSAT DATA CONTINUITY MISSION

OPERATIONAL LAND IMAGER
TOP OF ATMOSPHERE
RADIANCE SPECTRA

Effective Date: 01/04/2007

Expiration Date: 01/04/2012

National Aeronautics and
Space Administration

Goddard Space Flight Center
Greenbelt, Maryland

CM FOREWORD

This document is a Landsat Data Continuity Mission (LDCM) Project Configuration Management (CM)-controlled document. Changes to this document require prior approval of the applicable Configuration Control Board (CCB) Chairperson or designee. Proposed changes shall be submitted to the LDCM CM Office (CMO), along with supportive material justifying the proposed change. Changes to this document will be made by complete revision.

Questions or comments concerning this document should be addressed to:

LDCM Configuration Management Office
Mail Stop 427
Goddard Space Flight Center
Greenbelt, Maryland 20771

Signature Page

Prepared by:

Original Signed	**01/04/07**
Brian L. Markham	Date
LDCM Calibration / Validation Scientist	
NASA/GSFC - Code 614.4	

Original Signed	**01/04/07**
James C. Storey	Date
USGS LDCM Systems Engineer	
USGS/EROS - SAIC	

Reviewed by:

Original Signed	**01/04/07**
Jeanine E. Murphy-Morris	Date
LDCM OLI Instrument Manager	
NASA/GSFC - Code 427	

Original Signed	**01/04/07**
Evan H. Webb	Date
LDCM Mission Systems Manager	
NASA/GSFC - Code 599	

Approved by:

Original Signed	**01/04/07**
William R. Ochs	Date
LDCM Project Manager	
NASA/GSFC - Code 427	

LDCM Project Document Change Record

REV LEVEL	DESCRIPTION OF CHANGE	DATE APPROVED
Rev. -	Baseline Release. Approved by CCR 427-000007.	01/04/07

Purpose

This document contains three radiance spectra for use in evaluating the pixel-to-pixel spectral uniformity of the OLI bands (sec 5.6.2.3 of OLI-RD). The radiance spectra are calculated for the top-of-atmosphere (100 Km) using MODTRAN 4 at a solar zenith angle of 30° for a nadir view and an Earth-Sun Distance of 1 AU using the solar irradiance data file "Chkur.dat". The spectra were processed at the full MODTRAN spectral resolution and binned into 1 nm rectangular bandpasses.

Radiance Spectra 1: Exoatmospheric Lambertian Reflector (100% diffuse reflectance)
Radiance Spectra 2: Desert Soil : Railroad Valley (RRV) Playa Surface Spectra from The University of Arizona propagated through mid-latitude summer atmosphere with water column abundance scaled to 1.0 gm/cm2 (64 km Vis).
Radiance Spectra 3: Vegetation: Grass surface spectra from MODTRAN 4 propagated through a tropical atmosphere (23km Vis).

MODTRAN spec_alb.dat file: 38 "grass" - JHU becknic database, vegetation

The Exoatmospheric Lambertian Reflector (Radiance Spectra 1) is also for use in calculating the integrated out-of-band response (sec 5.4.2.2.1 of OLI-RD).